# All Source Analysis System / Enemy Situation Correlation Element (ASAS / ENSCE) Test Documents And Interface Module (Aim) Collection, 1985 – 1987 5.4 cubic feet JPL 199

## **History**

The intelligence information fusion system ASAS / ENSCE Project grew out of JPL's work for the Defense Department after 1982. ASAS / ENSCE was a project for the U.S. Army and was in keeping with the May, 1982 Memorandum of Understanding between the Army and Caltech-JPL which anticipated that up to 30 percent of JPL's budget might come from Department of Defense sources.

In July 1982 James Ambrose, Under the Secretary of the Army, visited JPL and invited JPL to propose a crash program to continue work started in 1975 by the Army. This work had involved the "fusion" of battlefield intelligence collected from many sources in many formats into a graphic display format usable by military leaders to make tactical command and control military decisions.

JPL had had experience in fusing scientific and engineering data while conducting NASA space missions and therefore had created "advanced architectural concepts" which could be applied to Army needs.

The ASAS system made use of remote sensors / inputs, by feeding high speed data networks linked by software to state of the art computers with large mass storage and file-to-file data transfer. This system collected intelligence information, processed it and delivered the "intelligence products". The Army defined it as a physically distributed but functionally centralized near real-time military intelligence transaction processor.

The types of intelligence functions this system was to perform included: process intelligence messages, analyze electronic intelligence (ELINT) and communications intelligence (COMMI), integrate ELINT and COMMI, analyze fixed target intelligence or visual / imaging data and analyze "all sources", situations and targets. Also, manage collections, provide operations security (OPSEC) and accommodate electronic warfare (EW) and electronic counter measures (ECM).

As planned in 1982, JPL was to make an ASAS prototype ("Baseline") version by 1985 leading to a 1989 version ("Objective") with advanced hardware, able of being replicated by subcontractors for Army delivery. Six ASAS's were to be delivered in 1985 for European deployment; 32 were to be delivered in 1989 Army-wide that would have "all sources fusion capability".

In 1982 the Army's Development and Readiness Command (DARCOM) had in place an office for ASAS; it issued contracts to industry to demonstrate concepts in a "brassbound" format.

JPL decided that the first step it would take would be to define ASAS as a project. JPL would: prioritize requirements, design concepts, implement a plan and procurement and calculate cost of designing and planning. JPL would create a new, complex end-to-end information system in its architecture, much like an end-to-end information system for space exploration (planet-spacecraft-telemetry-processed data-information for a scientist). The 1982 design was to make software that could evolve with hardware improvements to run and also an information system with communication interconnectivity.

The hardware of the 1985 version of ASAS was to include only a Central Station; in addition to that Central Station was to be an expandable number of inward communication sensors; the Central Station was to be transportable and contractor serviceable and have outward communication to command posts.

A Special Task Force of Army and JPL people was set up to meet the 1985 goal on a crash basis, with the JPL personnel to spend most of their time on ASAS.

The ASAS Project was administered through the Army's Joint Tactical Fusion Program Management Office (JTFPMO), which almost as soon as it was operating began to "descope" ASAS (i.e., reduce or modify the required performance). By December, 1983 due to changing budgets, improving technology and changing Army needs, the 1985 ASAS had been redefined as to what it would include.

It now included: "man machine interfaces" (MMIs) with 300 meter "tethers", communication and radio shelters with a 120,000 messages per day capacity handled by computer storing data on tape drives,

redundant communications between the radio shelters with 16 communications inputs and 60 voice channels. The shelters were powered by 50/60 Hz generators, the MMIs by portable generators.

In December 1983 it was planned to spend \$64M during FY'84 (where \$184M had been expected); for FY'84 through FY'89, \$473M was to be spent on ASAS. For the whole of the JTF Program, expected costs were as follows: 1983 preparation \$2M; 1983 to 1989 definition and Baseline models \$527M; 1985 to 1989 upgrading of hardware and software \$197M; 1986 to 1993 production of system with spares \$2110M; 1984 to 1993 total costs \$2,747.8M.

Of these amounts, the Army funded JPL during 1983 for \$17.5M and 1984 for \$59.2M. With the 1985 to 1990 anticipated funding, JPL would have received (for the period 1983 to completion) an additional \$795.8M. During the period of Objective Production following the delivery of the Baseline model, this would have paid for JPL system engineering and technical advice only.

The 1985 Baseline system was to include four "shelter" types:

- 1) An intelligence data processing shelter with a computer (32-bit, 0.7 MIPS) with 800 MB of storage, three workstation computers (32-bit, 0.3 MIPS) with 160 MB of storage, all with power and environment conditioning. The ASAS-configuration stations would not be dismountable; an ENSCE-configuration would be operated in garrison environment.
- 2) A communications and radio shelter with 32 communication ports controlled by a security computer (32-bit), four terminals, a gateway processor, encryption / decryption devices ("cryptos"), modems, multiplexers and multichannel voice / data radios, all with power and environment conditioning.
- 3) A Forward Area Support Shelter to consolidate and relay data from brigade-level sensors (with a terminal to enter verbal data). Data flowed through the communications shelter to the intelligence data processing shelter.
- 4) A support shelter [basically, a secure "storage shed"].

Later upgrades planned for, included a remote workstation shelter (with a beefedup workstation computer plus communications devices).

Five of these ASAS / ENSCE systems were to be made during the Baseline phase (1983-89), 2 ASASs to be delivered at Army Corps level (1 to be deployed in the U.S., 1 in Europe). Also, 2 ASASs to be delivered at Army Division level (1 to be deployed in the U.S., 1 in Europe) and 1 ENSCE to be delivered to a tactical air center in the U.S.

In the Objective Phase (March, 1989 to July, 1992) 33 systems were to be delivered, one every five weeks (32 ASASs, 1 ENSCE).

By 1985, the Army changed the above delivery dates, goals and products in ASAS due to less money, changed needs and changing technology. It now asked JPL to create a new piece of hardware, a Portable ASAS / ENSCE Work Station (PAWS) to be included in the Man Machine Interface (MMI). For FY'86 and FY'87, JPL was to deliver 2 FSIC (Forward Sensor Interface and Control), 2 AIM (ASAS Interface Model) with microfix workstations, 2 PAWS and associated software.

On December 12, 1984, Martin Marietta ("Contractor B") received the sub-contract from JPL for AIM and IDP development; Ford Aerospace ("Contractor A") on the same date, received the sub-contract of FSIC and CPI. In 1985 JPL was negotiating contracts for only the Baseline system with Martin Marietta and Ford Aerospace so it could handoff JPL development to them for production; it had not met the 1985 delivery of the 5 ASAS systems that had been envisioned in 1982.

In 1985 Jack James, the supervisor of ASAS / ENSCE's Project Manager, believed that although the finest team had been assembled to work on ASAS, the three year crash project had not proceeded to either JPL's or the Army's satisfaction. This was because of changing Department of Defense requirements and the lack of expected Program money. The Definition Phase had received a go-ahead in April, 1983 and JPL delivered products in 1984.

The ASAS / ENSCE Baseline model was field demonstrated during the military exercise BORDER STAR at Ft. Bliss, TX using "the AIM Brassboard (netted Microfix) system". This was between March 15 and March 24, 1985. The AIM Brassboard (ABB) operated 82.25 hours out of a 114-hour exercise. The

ABB was able of being packed and moved in 2 hours. Instead of just "shelters", the components of ASAS / ENSCE were now truck-mounted.

The stages of ASAS / ENSCE had not been completed as planned; it had "gone off track" because of a staffing problem stemming from hiring scarce software experts. Exceptional security requirements compounded getting work done. Increased personnel security levels were required when dealing with ASAS system architecture and this therefore raised costs and slowed development.

ASAS / ENSCE applications software was written by JPL and sub-contractors McDonald Douglas, HRB-Singer and TRW. JPL integrated this software. The communication software was written by JPL, Informatics and Ford Aerospace. MMI software was written by JPL and Boeing, or was purchased commercially.

By May 1985, two videos were planned to describe ASAS / ENSCE development and use as seen at BORDER STAR. At the same time Ford Aerospace had working an operating unit of its subcontract portion of ASAS. Also, by May 1985 the Baseline model was re-specified in a Plan D, Revision 3 with three modules (AIM, FSIC, CPI and IDP). The number of revisions was an indication of the extent of change in what the Army wanted during the previous three years. Jack James noted 10 iterations in the contract definition of ASAS / ENSCE. The first JPL proposal to the Army was made September 2, 1982; the tenth was made in May 1985. After two and a half years the Project had yet to converge on a stable definition. James expressed his concern about what JPL had committed to do versus probable funding. The problems were centered in the Army's demand for militarized documentation, hardware and software for the Baseline models; this was not a characteristic of the Baseline models but it was what the Army now demanded. By July, Martin Marietta had changed the MMI.

The changing requirements had led to JPL's inability to deliver the product. In fact, James stated that "JPL has never encountered an environment of changing sponsor demands such as we have experienced on the ASAS / ENSCE where we have been unable to stabilize agreements with the sponsor and proceed to implement those agreements for a period averaging longer than 3-4 months".

During June 1985 a project technical review of ASAS / ENSCE occurred. To get the project moving, a JPL "Tiger Team" presented a set of options for action to the Army's head of the project in July 1985. He chose "Option 1" and "Smart Work stations" as the new project objectives. The ASAS / ENSCE hardware was now specified as truck-mounted using distributed hardware modules with distributed and parallel databases and with workstations. These would provide a virtual real time graphic display of a battlefield, including targets identified as friendly of enemy, their location, type, direction and movement and size.

An unclassified description of ASAS showed five kinds of truck-carried equipment: FSIC (Forward Sensor Interface and Control), CPI (Communications Processor and Interface), IDP (Intelligence Data Processor), AIM (ASAS Interface Module) and RAD (Radio Module).

JPL planned in August to deliver an AIM Brassboard to the 9<sup>th</sup> Infantry Division in mid-Summer, 1985. For JPL, the falling behind in ASAS / ENSCE software development became an embarrassment.

By October 1985 the Army began to doubt it could track and control the JPL ASAS / ENSCE Project and its expenditure of funds. Performance, such as the delivery of a working PAWS by the Summer of 1986, would stabilize and protect the project from such doubts, damaging the continuing project.

By November 1985, JPL was also involved in other subsidiary ASAS work, e.g., tactical information fusion computer systems. One project was called New Work Opportunity 74A. Interruptions due to changed parameters for in Fy'84 and FY'85 meant that \$10M to be spent over a 5-year period still had 4 years of work to do. This work included getting systems to talk to each other; the systems were to integrate sensor messages using an interim computer system and generate action messages for a field commander. These Army systems already existed; some were known as BETA, MICROFIX (an 8-bit machine) and TCAC. JPL proposed to make it so they could communicate with one another and with ASAS / ENSCE. These systems and their sensors were Secret; the algorithms which detected threats and the threat sensors may have been Top Secret. Given this level of security, JPL recognized its proposal would be difficult to accomplish. A "dry run" of a PAWS was carried out in-house by December 11, 1985.

Initially and briefly Jack James was Project Manager with Malvin Yeater (who retired in November 1993) as his Deputy and then was Project Manager from 1982 to 1987. He was followed by James Evans as Project Manager from 1987 to 1991.

## **Provenance**

The originator of the collection was Leo Jarzomb, who was with JPL Section 374, Project Test and Operations Section. The collection was transferred from Section 374 to the JPL Records Center on September 29, 1989 and then from the Records Center to the Archives on August 5, 1992 as Accession 92-71.

## **Collection Arrangement and Description**

The collection contains contractor reports, with the majority done by Martin Marietta Corporation and others by Electrospace Systems, Inc. and BDM Corporation.

The collection consists mainly of contractual reports, correspondence, manuals, interoffice memoranda, conference reports, handwritten notes, diagrams, charts, drawings, test plans, test procedures, specifications, technical briefs and software documents, pertaining to the All Source Analysis System / Enemy Situation Correlation Element (ASAS / ENSCE) and the Interface Module (AIM) projects.

The collection is arranged in 204 file folders as originally sequenced. Most of the reports are bound or stapled, but many have been removed from the binders. Some of the materials were originally stored in file cabinets and in hanging file folders, labeled specifically by subject matter or document number. These numbers are not found on the document cover, but on an accompanying JPL memorandum. The original order has been retained, although internal evidence in the files indicated the collection was originally a part of a larger numeric-filing scheme, here incomplete.

Most acronyms used are defined in Part L of Martha Martinez, editor, *Abbreviations and Acronyms Guide*, JPL 1030-30 Rev. A, May 1980. A copy is available in the repository.

## **Conservation/Preservation**

Standard preparations of documents for long term storage were completed.

## **Separation Statement**

No materials were separated from the collection.

## **Finding Aids**

No other finding aids exist.

## FILE FOLDER LIST

## Box 1 of 18

- Fld 1 Martin Marietta Memorandum, re: attached BDM Corporation report, titled: Draft All Source Analysis System / Enemy Situation Correlation Element (ASAS/ENSCE) Test Software Requirements Document, November 1985.
- Fld 2 JPL Interoffice Memorandum (IOM), Document Information Report and Handwritten Note, pertaining to Martin Marietta Report, titled: Graphical Kernel System Release Description

	Document (RDD) for the Portable ASAS/ENSCE Workstation (PAWS) (Initial for October 13, 1986.	or Approval),
Fld 3	L IOM, re: attached Martin Marietta Report, titled: ASAS/ENSCE, Specially Configured acrowns Software Specification Document (SSD) for the PAWS (Initial for Approval), ovember 1986.	
Fld 4	L IOMs, re: attached Martin Marietta Report, titled: ASAS/ENSCE, VMS Configuration ements RDD for the PAWS (Initial for Approval), December 1986.	
Fld 5	LIOM, re: attached Martin Marietta Report, titled: ASAS/ENSCE, Support Software Test port for the PAWS (Initial for Approval), December 1986.	
Fld 6	IOM and Handwritten Note, pertaining to the attached Martin Marietta Report, titled: AS/ENSCE, Software Operator's Manual Parallax Window Emulation Driver for the WS (Initial for Approval), December 1986.	
Fld 7	PL IOM and Handwritten Note, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, Software Operator's Manual Parallax 600 and 1280 Device Drivers for the PAWS (Final for Approval), July 1986.	
Fld 8	PL IOMs and Letters, re: attached Martin Marietta Report, titled: ASAS/ENSCE, Interface Module (AIM) (6) Electromagnetic Compatibility / Electromagnetic Interference (EMC/EMI) Test Procedure, March 1986.	
Fld 9	PL IOMs, re: attached Martin Marietta Report, titled: ASAS/ENSCE, AIM (6) EMC/EMI Test Plan (Final), May 1986.	
Fld 10	L IOMs and Letters, re: attached Martin Marietta Report, titled: ASAS/ENSCE, AIM (6) ad Test Procedure (Final), November 1986.	
Fld 11	PL IOMs and Letters, re: attached Martin Marietta Report, titled: ASAS/ENSCE, AIM (6) Thermal Test Plan (Final), November 1986.	
Fld 12	PL IOMs, re: attached Martin Marietta Report, titled: ASAS/ENSCE, Tethered Fiber Optic Chassis Subsystem Acceptance Test Procedure (Final for Approval), February 1986.	
Box 2 of 18		
Fld 13	PL IOMs, re: attached Martin Marietta Report, titled: ASAS/ENSCE, Tethered Fiber Optic hassis Subsystem Functional Test Procedure PCN No. 1 (Revision for Approval), eptember 1986.	
Fld 14	L IOM, re: attached Martin Marietta Report, titled: ASAS/ENSCE, Tethered Fiber Optic assis Subsystem Functional Test Procedure PCN No. 1 (Final), September 1986.	
Fld 15	PL IOMs and Letters, re: attached Martin Marietta Report, titled: ASAS/ENSCE, AIM (6) cceptance Test Plan, Test Plans and Procedures for AIM Development, February 1986.	
Fld 16	PL IOMs and Letters, re: Martin Marietta Report (not attached), titled: ASAS/ENSCE, Test lans and Procedures AIM (6), August 1986.	
Page 5 of 20	Jet Propulsion Laboratory Archives	JPL199

- Fld 17 JPL IOMs, Document Information Report and Letters, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, AIM (6) Acceptance Test Procedure, PCN No. 2 (Final), January 1987. Fld 18 JPL IOM and Document Information Report, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, AIM (6) Development / Qualification Test Procedure, PCN No. 2 (Final), January 1987. Fld 19 JPL IOMs and Letters, re: attached Martin Marietta Report, titled: ASAS/ENSCE, AIM (6) S/V, E Thermal Test Procedure, PCN No. 2 (Final), November 1986. Fld 20 JPL IOMs and Letters, re: attached Martin Marietta Report, titled: ASAS/ENSCE, Module Development Test Plan AIM (6) Road Test Plan (Final), May 1986. Fld 21 JPL IOM, re: attached Martin Marietta Report, titled: ASAS/ENSCE, PAWS S/V, E Assembly Level Acceptance Test Plan (Initial for Approval), June 1986. Fld 22 Martin Marietta Report, titled: ASAS/ENSCE, PAWS S/V, E Assembly Leval Acceptance Test Plan (Final), October 1986. Fld 23 JPL IOM, re: attached Martin Marietta Report, titled: ASAS/ENSCE, AIM (6) Thermal Test Plan (Final), February 1986. Fld 24 JPL IOMs and Letters and Change Notice, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, AIM (6) S/V, E EMC/EMI Test Procedure, April 1986. Fld 25 JPL IOMs and Letters, re: attached Martin Marietta Report, titled: ASAS/ENSCE, AIM (6) S/V, E EMC/EMI Test Procedure, PCN No. 4 (Final), September 1986. Fld 26 JPL IOMs and Letters, re: attached Martin Marietta Report, titled: ASAS/ENSCE, Software Test Procedure for the PAWS (Preliminary for Approval), June 1986. Fld 27 JPL IOMs, Letters and Handwritten Note, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, AIM (6) Development / Qualification Test Plan, Revision 1 (Final), November 1986. Box 3 of 18 Fld 28
- JPL IOMs, Letters and Handwritten Notes, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, 12.5 Kilowatt (KW) Power Unit Test Plan, Revision 2, March 1987.
- Fld 29 JPL IOMs, re: attached Martin Marietta Report, titled: ASAS/ENSCE, AIM (6) / Forward Sensor Interface Control (FSIC) Fort Hood Receiving Acceptance Test Plan, Revision A (Final), September 1986.
- JPL IOMs, Letters and Notes, pertaining to the Martin Marietta Report (not attached), titled: Fld 30 ASAS/ENSCE, AIM (6) / FSIC Fort Hood Recognition Acceptance Test Plan, Revision G, January – November 1986.

Fld 31 JPL IOMs, Letters and Notes, pertaining to the Review and Approval of Martin Marietta's Environmental Science and Information (ESI) Documents, October 1986 – January 1987.
 Fld 32 JPL IOMs, re: attached Martin Marietta Report, titled: ASAS/ENSCE, PAWS S/V, E Assembly Level Equipment Vibration Qualification Test Procedure Video Disk / Power

Assembly, ASAS-RQJ02-00 (Final), March 1987.

- Fld 33 JPL Document Information Report, re: Review of attached Martin Marietta Report, titled: ASAS/ENSCE, PAWS S/V, E Assembly Level Transportation Shock Qualification Test Procedure VideoDisk Assembly / Power Assembly, ASAS-RQU01-00 (Final), March 1987.
- Fld 34 JPL IOM, Document Information Report and Letter, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, PAWS Printer Assembly Acceptance (Functional) Test Procedure (Final), September 1987.
- Fld 35 JPL Letter and Document Information Report, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, PAWS Keyboard Assembly Acceptance (Functional) Test Procedure PCN No. 2 (Final), May 1987.
- Fld 36 JPL Letter and Document Information Report, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, PAWS Mouse Assembly Acceptance Test Report (Final), August 1987.
- Fld 37 JPL Document Information Report, re: attached Martin Marietta Report, titled: ASAS/ENSCE, PAWS S/V, E Assembly Level L Temperature Cycling Qualification Test Procedure Video Disk Assembly / Power Assembly, ASAS-RQW03-00, PCN No. 2 (Final), March 1987.
- Fld 38 JPL IOM and Document Information Report, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, PAWS S/V, E Assembly Level Altitude and Pressure Qualification Test Procedure Text / Graphics Monitor Assembly, ASAS-RQF12-00 (Final), October 1986.
- Fld 39 JPL Document Information Report, re: attached Martin Marietta Report, titled: ASAS/ENSCE, PAWS S/V, E Assembly Level Transportation Shock Qualification Test Procedure Text / Graphics Monitor Assembly, ASAS-RQU09-00 (Final), October 1986.
- Fld 40 JPL Document Information Report, re: attached Martin Marietta Report, titled: ASAS/ENSCE, PAWS S/V, E Assembly Level Equipment Vibration Qualification Test Procedure Text / Graphics Monitor Assembly, ASAS-RQJ10-00 (Final), October 1986.
- Fld 41 JPL Document Information Report, re: attached Martin Marietta Report, titled: ASAS/ENSCE, PAWS S/V, E Assembly Level Temperature Cycling Qualification Test Procedure Text / Graphics Monitor Assembly, ASAS-RQW 11-00 (Final), October 1986.
- Fld 42 JPL Document Information Report, re: attached Martin Marietta Report, titled:
  ASAS/ENSCE, PAWS S/V, E Assembly Level Humidity Qualification Test Procedure Video
  Disk Assembly / Power Assembly, ASAS-RQI05-00 (Final for Approval), October 1987.

- Fld 43 JPL Document Information Report, re: attached Martin Marietta Report, titled: ASAS/ENSCE, PAWS S/V, E Assembly Level Humidity Qualification Test Procedure Text / Graphics Monitor Assembly, ASAS-RA113-00 (Final), October 1986.
- Fld 44 JPL IOMs and Letters, re: Martin Marietta Document (not attached), titled: Transmittal of Module Development Test Documentation, October November 1986.
- Fld 45 JPL IOMs and Letters, re: Martin Marietta Report (not attached), titled: ASAS/ENSCE, Development / Qualification Test Data Procedures, November 1986.
- Fld 46 JPL IOMs and Letters, re: Martin Marietta Report (not attached), titled: ASAS/ENSCE, Acceptance Test Procedures, October November 1986.
- Fld 47 JPL IOMs and Letters, re: Martin Marietta Report (not attached), titled: ASAS/ENSCE, Acceptance Test Procedure, November 1986.

#### Box 4 of 18

- Fld 48 JPL IOM and Document Information Report, re: attached Martin Marietta Report, titled: ASAS/ENSCE, PAWS S/V, E Assembly Level Temperature Cycling Acceptance Test Procedure Printer, ASAS-RAW29-00, October 1987.
- Fld 49 JPL IOMs and Letters, re: Martin Marietta Report (not attached), titled: Temperature Qualification Test Plan for the ASAS/ENSCE Shelter Power Entry Panal Power Supply, ESI Part No. 85-13263-001, May 1, 1986.
- Fld 50 JPL IOMs and Letters, re: attached Martin Marietta Report, titled: Vibration Acceptance Test Procedure / Data Sheet Individual Test for the ASAS/ENSCE 10 KW Generator Kit, February 14, 1986.
- Fld 51 JPL Document Information Report, re: attached Martin Marietta Report, titled: ASAS/ENSCE, PAWS S/V, E Assembly Level Temperature Cycling Qualification Test Procedure Printer, ASAS-RQW25-00 (Final for Approval), October 1987.
- Fld 52 JPL IOMs and Letters, re: attached Martin Marietta Report, titled: Electrical Production Acceptance Test Procedure / Data Sheets for the ASAS/ENSCE Shelter Power Entry Panel Power Supply ESI Part No. 85-13263-001, January 14, 1986.
- Fld 53 JPL Document Information Report, re: attached Martin Marietta Report, titled: PAWS S/V, E Assembly Level Humidity Qualification Test Procedure, Printer, ASAS-RQ127-00 (Final), October 1987.
- Fld 54 JPL Letters and Document Information Report, re: attached Martin Marietta Report, titled: PAWS S/V, E Assembly Level 8000 Feet Low Pressure, Operation Altitude and Pressure Qualification Test Procedure Keyboard Assembly, ASAS-RQF36-00 (Revised Preliminary), December 1987.
- Fld 55 JPL Letters and Document Information Report, re: attached Martin Marietta Report, titled: Portable ASAS/ENSCE Workstation Video Graphics Monitor Assembly Acceptance (functional) Test Procedure, ASAS-RAG02-08 (Final), September 1, 1987.

Fld 56 JPL Document Information Report, re: attached revised Martin Marietta Report, titled: ASAS/ENSCE, Text Graphics Monitor Assembly Acceptance (functional) Test Procedure for PAWS Document Change Notice Proposal, September 16, 1987. Fld 57 JPL IOM, re: attached Martin Marietta Report, titled: ASAS/ENSCE, PAWS S/V, E Module Level EMC Qualification Test Procedure (Initial for Approval), December 1986. Fld 58 JPL IOM, re: attached Martin Marietta Report, titled: ASAS/ENSCE, PAWS S/V, E Assembly Level EMC Qualification Test Procedure Video / Graphics Monitor Assembly (VGMA), ASAS-RQE22-00 (Initial for Approval), December 1986. Fld 59 JPL IOM, re: attached Martin Marietta Report, titled: ASAS/ENSCE, PAWS S/V, E Assembly Level EMC Qualification Test Procedure Text / Graphics Monitor Assembly (TGMA), ASAS-RQE14-00 (Initial for Approval), December 1986. Fld 60 JPL IOM, re: attached Martin Marietta Report, titled: ASAS/ENSCE, PAWS S/V, E Assembly Level EMC Qualification Test Procedure Printer Assembly, ASAS-RQE28-00 (Initial for Approval), December 1986. Fld 61 JPL IOM, re: attached Martin Marietta Report, titled: ASAS/ENSCE, PAWS S/V, E Assembly Level EMC Qualification Test Procedure Keyboard Assembly, ASAS-RQE33-00 (Initial for Approval), December 1986. JPL IOM, re: attached Martin Marietta Report, titled: ASAS/ENSCE, PAWS S/V, E Fld 62 Assembly Level EMC Qualification Test Procedure Mouse Assembly, ASAS-RQE38-00 (Initial for Approval), December 1986. Fld 63 JPL IOMs, Document Information Report and Letters, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, PAWS S/V, E Assembly Level Transportation Shock Qualification Test Procedure, VGMA (Preliminary for Approval), August 1987. Fld 64 JPL IOMs and Document Information Report, re: attached Martin Marietta Report, titled: ASAS/ENSCE, AIM (6) Road Test Report Unit No. 1 (Final), October 1986. JPL IOM, re: attached Martin Marietta Report, titled: ASAS/ENSCE, AIM (6) Road Test Fld 65 Report Unit Module No. 2 (Final), October 1986. Fld 66 JPL IOMs, Letters and Document Information Report, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, AIM (6) Electromagnetic Compatibility and Interference (EMI/EMC) Test Report Unit Module No. 1 (Final), October 1986. Fld 67 JPL IOMs, Letters and Document Information Reports, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, AIM (6) Road Test Report Module No. 2 (Final for

## Box 5 of 18

Approval), June 1986.

Fld 68 JPL IOMs, Document Information Reports and Letters, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, AIM (6) Module Acceptance Test Report, Unit Module No. 1 (Final), October 1986.

Fld 69 JPL IOMs, re: attached Martin Marietta Report, titled: ASAS/ENSCE, AIM (6) Shelter Acceptance Test Report, Second Unit (Final), September 1986. Fld 70 JPL IOM, Document Information Reports and Letters, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, AIM (6) Module Acceptance Test Report, Unit Module No. 2 (Final), November 1986. Fld 71 JPL IOMs, Letters and Handwritten Notes pertaining to the Martin Marietta Report, titled: ASAS/ENSCE, AIM (6) Shelter Development Test Report, Unit No. 1 (Final), June 1986. Fld 72 JPL IOM, re: Attached Electrospace Systems, Inc. Report, titled: Acceptance Shielding Effectiveness Test Report for the ASAS/ENSCE, AIM S-250 Shelter, February 11, 1986. Fld 73 JPL IOM, re: Martin Marietta Report (not attached), titled: ESI Test Results Module Development, October 1986. JPL IOM, re: Attached Electrospace Systems, Inc. Specifications, titled: Electromagnetic Fld 74 Interference (EMI) Test Report for the Fire Suppression Subsystem – ASAS/ENSCE, July 31, 1986. Fld 75 JPL IOMs, re: Attached Electrospace Systems, Inc. Report, titled: Electromagnetic Interference (EMI) Test Report for the Generator Control and Power Distribution Assemblies, August 1, 1986. Fld 76 JPL IOMs and Notes, re: Martin Marietta Report (not attached), titled: ASAS/ENSCE, Vibration Acceptance Test Report, Intrusion Detection System, November 1986. Fld 77 JPL IOMs and Letter, re: Martin Marietta Reports (not attached), titled: ASAS/ENSCE, Intrusion Detection Systems Test Report, November 1986. JPL IOMs, re: Martin Marietta Report (not attached) that pertains to the ASAS/ENSCE Fld 78 Qualification Test Reports, November 1986. Fld 79 JPL IOMs, re: Martin Marietta Reports (not attached) that pertains to the ASAS/ENSCE Acceptance Test Results, November 1986. Fld 80 Various Reports by Electrospace Systems, Inc., re: Preliminary Vibration and Temperature Acceptance Test Results for the ASAS/ENSCE Tethered Power Distribution Assembly, July 16, 1986. Fld 81 Various Reports by Electrospace Systems, Inc., re: Preliminary Vibration and Temperature Acceptance Test Results for the ASAS/ENSCE Power Interface Assembly, September 19, 1986. Fld 82 Various Reports by Electrospace Systems, Inc., re: Preliminary Vibration and Temperature Acceptance Test Results for the ASAS/ENSCE Load Bank and 10 Kilowatt Generator Kit, September 22, 1986. Fld 83 Report by Electrospace Systems, Inc., titled: Preliminary Vibration Acceptance Test Results for the ASAS/ENSCE Power Interface Assembly, September 23, 1986.

- Fld 84 JPL IOM, re: Attached Electrospace Systems, Inc. Report, titled: Preliminary Temperature Acceptance Test Results for the ASAS/ENSCE Power Entry Panel Power Monitor, October 16, 1986.
- Fld 85 JPL Document Information Report and Letter, re: attached Electrospace Systems, Inc. Report/Specifications, titled: Temperature Acceptance Test Report for the ASAS/ENSCE Intrusion Detection System, September 30, 1986.

#### Box 6 of 18

- Fld 86 JPL IOMs and Document Information Reports, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, AIM (6) Tether Fiber Optic Subsystem, Set No. 1 Test Report (Final), August 1987.
- Fld 87 JPL IOMs and Document Information Reports, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, AIM (6) Tether Fiber Optic Subsystem, Set No. 2 Test Report (Final), August 1987.
- Fld 88 JPL IOMs and Document Information Reports, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, AIM (6) Tether Fiber Optic Subsystem, Set No. 3 Test Report (Final), August 1987.
- Fld 89 JPL IOMs, Letters and Document Information Reports, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, AIM (6) Tethered Fiber Optic Subsystem, Set No. 4 Test Report (Final), August 1987.
- Fld 90 JPL Document Information Report, re: attached Martin Marietta Report, titled: ASAS/ENSCE, PAWS Assembly Level Humidity Qualification Test Report, Keyboard (Final), August 1987.

## Box 7 of 18

- Fld 91 JPL Document Information Report, re: attached Martin Marietta Report, titled: ASAS/ENSCE, PAWS Assembly Level Humidity Qualification Test Report, VDA/PA (Final for Approval), August 1987.
- Fld 92 JPL Document Information Report and Letter, re: attached Martin Marietta Report, titled: ASAS/ENSCE, PAWS Assembly Level Humidity Qualification Test Report, VDA/PA (Final), August 1987.
- Fld 93 JPL Document Information Reports, re: attached Martin Marietta Report, titled: ASAS/ENSCE, PAWS Assembly Level Altitude and Pressure Qualification Test Report Videodisk Assembly / Power Assembly (Final for Approval), October 1987.
- Fld 94 JPL Document Information Reports, re: attached Martin Marietta Report, titled: ASAS/ENSCE, PAWS Assembly Level Altitude and Pressure Qualification Test Report, VDA/PA (Preliminary), August 1987.
- Fld 95 JPL Document Information Report, re: attached Martin Marietta Report, titled: ASAS/ENSCE, PAWS Assembly Level Altitude and Pressure Operating Qualification Test Report, Keyboard (Preliminary), October 1987.

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  JPL IOMs and Letters, re: attached Martin Marietta Report, titled: ASAS/ENSCE, Safety Assessment Report for PAWS (Initial Draft), October 1986.

  Fld 111

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  Box 9 of 18

  Fld 112

  JPL IOMs, re: attached Martin Marietta Report, titled: ASAS/ENSCE, Safety Assessment
- Fld 112 JPL IOMs, re: attached Martin Marietta Report, titled: ASAS/ENSCE, Safety Assessment Report for the PAWS (Final for Approval), December 1986.
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- Fld 114 JPL IOMs, re: attached Martin Marietta Report, titled: ASAS/ENSCE, AIM-20 Technical Manual, Unit Maintenance Manual, October 1986.
- Fld 115 JPL Document Information Report, re: attached Martin Marietta Manual, titled: Interface Module, ASAS/ENSCE AN/TYQ-36 Operator's Manual, August 1, 1986.
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- Fld 117 JPL Document Information Report, re: attached Martin Marietta Report, titled: ASAS/ENSCE, Supportability Assessment Report for AIM (6) FSIC, September 1986.
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- Fld 119 JPL IOM, re: attached Martin Marietta Report, titled: ASAS/ENSCE, Support Equipment List, Revision D (Revision for Approval), September 1986.
- Fld 120 JPL IOM, re: attached Martin Marietta Report, titled: ASAS/ENSCE, Support Revision List, Revision D (Final), October 1986.
- Fld 121 JPL IOM, re: attached Martin Marietta Report, titled: ASAS/ENSCE, Short Form Provisioning Parts List PAWS (Initial for Approval), January 1987.
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## Box 10 of 18

Fld 125 JPL IOM, re: attached Martin Marietta Report, titled: ASAS/ENSCE, Tools and Test Equipment Revision D, Addendum A (Final), February 1987.

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Fld 141 JPL IOMs, re: attached Martin Marietta Report, titled: ASAS/ENSCE, ABB Phase 3 Software Test Procedure, Volume 2 (Final), May 1986.

#### Box 12 of 18

- Fld 142 JPL IOMs, re: attached Martin Marietta Report, titled: ASAS/ENSCE, ABB Phase 3 Software Test Procedures, Volume 3 (Final), May 1986.
- Fld 143 JPL IOMs, Document Information Reports, Letters and Handwritten Notes, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, System Integration Test Procedure (U), Volume 1 (Initial for Approval), June 1986.
- Fld 144 JPL IOM, re: attached Martin Marietta Report, titled: ASAS/ENSCE, System Integration Test Procedure, Volume 2, PCN No. 2 (Final), June 1986.
- Fld 145 JPL IOM and Letter, re: attached Martin Marietta Report, titled: ASAS/ENSCE, System Integration Test Procedure, Volume 1, PCN No. 2 (Final), August 1986.
- Fld 146 JPL IOMs and Document Information Reports, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, RA Software Acceptance Transfer Test Procedures (ATT) RATP08 TCP Processing, PCN No. 1 (Final), August 1986.
- Fld 147 Various IOMs, Reports, Letters and Notes, pertaining to the Martin Marietta Report (not attached), titled: ASAS/ENSCE, RA Software Acceptance Transfer Test Procedures, PCN Nos. 1 and 2, Volume 4, August 1986 February 1987.

## Box 13 of 18

- Fld 148 JPL IOMs and Document Information Report, pertaining to the attached Martin Marietta Report, titled: AIM (6) / FSIC Receiving Acceptance Test Procedure (Final), October 1986.
- Fld 149 JPL IOM, re: attached Martin Marietta Report, titled: ASAS/ENSCE, AIM (6) Data Flow Test Software Operator's Manual, May 1986.
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- Fld 152 JPL IOM and Document Information Report, re: attached Martin Marietta Report, titled: ASAS/ENSCE, ABB Phase 3 Software Regression Testing Summary Report (Final), June 1986.
- Fld 153 JPL IOMs and Document Information Report, re: attached Martin Marietta Report, titled: ASAS/ENSCE, Engineering Evaluation Report of the AIM (6) FSIC System Integration Test (Final), November 1986.
- Fld 154 JPL Document Information Report, re: attached Martin Marietta Report, titled: ASAS/ENSCE, Engineering Evaluation of the AIM No. 1 / FSIC No. 2 Module Integration Test, Final Report with Analysis (Final), October 30, 1986.

Fld 155 JPL IOMs, Letters and Document Information Report, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, Engineering Evaluation of the AIM No. 1 / Fsic No. 2, Module Integration Test, Final Report with Analysis (Final for Approval), October 1986. Fld 156 JPL IOMs, Document Information Reports, Letters and Notes, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, Engineering Evaluation of the AIM No. 2/ FSIC No. 1, Module Integration Test, Final Report with Analysis (Final), April 1987. Box 14 of 18 Fld 157 JPL IOMs, Document Information Report and Letters, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, Receiving and Acceptance Test Report AIM / FSIC Integrated System (Final for Approval), December 1986. Fld 158 JPL Document Information Reports, re: attached Martin Marietta Report, titled: ASAS/ENSCE, Fort Hood Receiving Acceptance Test Report, AIM (6) / FSIC Integrated System (Final), June 1987. Fld 159 JPL IOMs, re: attached Martin Marietta Report, titled: ASAS/ENSCE, System Test and Checkout Requirements (STACR) Document (Revision A for Approval), January 1987. Fld 160 JPL IOMs and Letters, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, Baseline Integrated Test Plan, Revision A (Final), September 1986. Fld 161 JPL IOMs and Letters, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, Baseline Integrated Test Plan, Revision A (Initial for Approval), April 1986. Fld 162 JPL IOM, re: attached Martin Marietta Report, titled: ASAS/ENSCE, Training Implementation Plan (Final), September 1986. Fld 163 JPL IOM, re: attached Martin Marietta Report, titled: ASAS/ENSCE, ABB / RA Operator Training Microfix TCP Operations Student Handout, March 1987. Fld 164 JPL IOM, re: attached Martin Marietta Report, titled: ASAS/ENSCE, Data Management Plan (Final), March 1986. Fld 165 JPL Document Information Reports, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, Resource Implementation Plan (Final for Approval), March 1987. Fld 166 Martin Marietta Report, titled: ASAS/ENSCE, Reliability Availability Maintainability (RAM) Program Planning Document (Final), May 1986. Fld 167 Martin Marietta Report, titled: ASAS/ENSCE, Electromagnetic Compatibility Control Plan for AIM (6), Assembly Level (Final for Approval), January 1986. Fld 168 JPL IOM, re: attached Martin Marietta Report, titled: ASAS/ENSCE, Electromagnetic Compatibility Control Plan (Revision for Approval), October 1986. Fld 169 JPL IOMs and Document Information Reports, pertaining to the attached Martin Marietta

Report, titled: ASAS/ENSCE, AIM Tempest Test Plan, February 1986.

## Box 15 of 18

Fld 170 JPL IOM, re: attached Martin Marietta Report, titled: ASAS/ENSCE, AIM / MECA Tempest Test Report (Final for Approval), September 1986. Fld 171 JPL IOMs, Document Information Reports, Letters and Handwritten Notes, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, PSDE Acceptance Test Plan (Final), June 1986. Fld 172 JPL IOMs, Document Information Reports and Letters, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, Software Requirements Document for RA Processing Software, October 1987. Fld 173 JPL IOMs and Document Information Reports, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, Software Requirements Document for RA External Communications Software, Revision A (Final), August 1986. Fld 174 JPL IOMs, Letters and Document Information Reports, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, Software Requirements Document for RA External Communications Software, Revision B (Final), October 1987. Fld 175 JPL IOMs, re: attached Martin Marietta Report, titled: ASAS/ENSCE, Peer Review Standards (Final for Approval), April 1986. Fld 176 JPL IOM, re: attached Martin Marietta Report, titled: ASAS/ENSCE, Software Security Peer Review Standard (Final), September 1986. Fld 177 JPL IOM, re: attached Martin Marietta Report, titled: ASAS/ENSCE, RA Software Acceptance Test Plan (Final), May 1986. Fld 178 JPL IOM, re: attached Martin Marietta Report, titled: ASAS/ENSCE, RA Software Acceptance Test Plan (Final for Approval), August 1986. Fld 179 JPL IOM, re: attached Martin Marietta Report, titled: ASAS/ENSCE, RA Software Acceptance Test Plan (Final), November 1986. Fld 180 JPL IOMs and Letters, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, Software Quality Assurance Plan (Final for Approval), February 1986. Fld 181 JPL IOMs and Letters, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, RA Software Development Plan (Final), November 1986. Fld 182 JPL IOMs, Letters and Document Information Reports, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, RA Software Acceptance Transfer Test Procedures (ATT) Volume 1 (Revision for Approval), August 1986. Fld 183 JPL IOMs, re: attached Martin Marietta Report, titled: ASAS/ENSCE, RA Software Acceptance Transfer Test Procedures (ATT), RATP03, Volume 2, PCN No. 1 (Final), August 1986.

## Box 16 of 18

Fld 184 JPL IOMs and Letters, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, RA Software Acceptance Transfer Test Procedures RATP04 Generate Messages, PCN No. 1, Volume 3 (Final for Approval), August 1986. Fld 185 JPL IOMs, Document Information Reports and Letters, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, RA Software Acceptance Transfer Test Procedures RATP05 Transmit Messages, PCN No. 1 (Final for Approval), August 1986. Fld 186 JPL IOMs and Letters, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, RA Software Acceptance Transfer Test Procedures RATP06 Originated MISMART and COMCAT Messages, PCN No. 1 (Final for Approval), August 1986. Fld 187 JPL IOMs, re: attached Martin Marietta Report, titled: RA Software Acceptance Transfer Test Procedures RATP07 Outgoing Message Processing, PCN No. 1 (Final for Approval), August 1986. Fld 188 JPL IOMs, Letters, Change Orders, Notes and Document Information Reports, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, RA Software Acceptance Transfer Test Procedure, Volume 4, RATP09 Database Filtering and Re-Tagging (Final), August 1986. Fld 189 JPL IOMs, Letters and Document Information Reports, titled: ASAS/ENSCE, RATP11 System Maintenance and Shutdown from System Supervisor Terminal, PCN No. 1 (Final for Approval), August 1986. Box 17 of 18 Fld 190 JPL IOMs, Notes and Letters, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, RA Software Acceptance Transfer Test Procedures (ATT) RATP12 System Supervisor Terminal Security, PCN No. 2 (Final), August 1986. Fld 191 JPL IOMs, re: Attached Martin Marietta Report, titled: ASAS/ENSCE, RATP10 System Supervisor Terminal Operations, PCN No. 1 (Final for Approval), August 1986. Fld 192 JPL IOM, re: attached Martin Marietta Report, titled: ASAS/ENSCE, Internal Interface Control Document, May 1986. Fld 193 JPL IOMs, re: attached Martin Marietta Report, titled: ASAS/ENSCE, AIM (6) Software Functional Design Document (FDD) (Initial for Approval), May 1986. Fld 194 JPL IOM, re: attached Martin Marietta Report, titled: ASAS/ENSCE, Software Requirements Traceability Matrix (SRTM) for RA Software, May 1986. Fld 195 JPL IOMs, Document Information Reports, Notes and Letters, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, RA Software Users Manual, Revision A, May 1987.

## Box 18 of 18

Fld 196	JPL IOM, re: attached Martin Marietta Report, titled: ASAS/ENSCE, RA Software Test Readiness Review Meeting Minutes, June 1986.	
Fld 197	Various JPL IOMs, pertaining to Martin Marietta Report (not attached), titled: ASAS/ENSCE, Accreditation Document Package AIM (6) / FSIC (Preliminary), March 3, 1986.	
Fld 198	JPL IOMs, Letters and Notes, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, AIM (6) Module Acceptance Test Plan (Final), July 1986.	
Fld 199	JPL IOMs, Letters, Document Information Reports and Notes, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, Verification Requirements, Baseline System Functional Specification Volume 3, Section 4, Revision B (Final), June 1986.	
Fld 200	JPL IOMs and Document Information Report, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, Verification Requirements, Baseline System Functional Specification, Volume 4-B, Section 4 (Final), December 1986.	
Fld 201	JPL IOMs, Notes, Letters and Document Information Report, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, AIM (6) Module Interconnect Plan (Final), November 1986.	
Fld 202	JPL IOMs and Letters, pertaining to the attached Martin Marietta Report, titled: ASAS/ENSCE, AIM (6) Module Interconnect Procedure (Initial for Approval), June 1986.	
Fld 203	IPL IOM, re: attached Martin Marietta Report, titled: ASAS/ENSCE, AIM (6) Module Interconnect Procedures (Final), September 1986.	
Fld 204	JPL IOM, re: attached Martin Marietta Report, titled: ASAS/ENSCE, PAWS Test Graphics Monitor Assembly Acceptance (Functional) Test Procedure (Final), July 1987.	

## **CATALOG DESCRIPTION**

All Source Analysis System / Enemy Situation Correlation Element (ASAS / ENSCE) Test Documents and Interface Module (AIM) Collection, 1985–1987.

5.4 c.f. (204 folders)

The collection contains contractor reports, with the majority done by Martin Marietta Corporation and others by Electrospace Systems, Inc. and BDM Corporation.

The collection consists mainly of contractual reports, correspondence, manuals, interoffice memoranda, conference reports, handwritten notes, diagrams, charts, drawings, test plans, test procedures, specifications, technical briefs and software documents, pertaining to the All Source Analysis System / Enemy Situation Correlation Element (ASAS / ENSCE) and the Interface Module (AIM) projects.

Register available in the repository.

# Tracings

Jet Propulsion Laboratory (U.S.) – History

James, Jack

Yeater, Malvin

Evans, James

Jarzomb, Leo

All Source Analysis System (ASAS) / Enemy Situation Correlation Element (ENSCE) Project

Interface Module (AIM) Project

Jet Propulsion Laboratory (U.S.) All Source Analysis System (ASAS) / Enemy Situation Correlation Element (ENSCE) Project

Interface Module (AIM) Project

U.S. Department of Defense

U.S. Army Development and Readiness Command (DARCOM)

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